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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,649	03/08/2001	Junichi Yamanouchi	003510-083	4869

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EXAMINER

SHOSHO, CALLIE E

ART UNIT PAPER NUMBER

1714

DATE MAILED: 03/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

AS-7

Office Action Summary	FOORM PTM-147-24	FOORM P1T(s)4	
	09/800,649	YAMANOUCI ET AL.	
	ExPmM1er4	FrT4U1MT4	
	Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-14, and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 12/12/02.

In light of the new grounds of rejection as set forth in paragraph 7 below, the following action is non-final.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites an improper Markush group. It is suggested that "and" is inserted between formula [S-8] and [S-9].

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 4-11, 13-14, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi et al. (U.S. 6,031,019) in view of Meyrick et al. (U.S. 6,344,497), Kiritani et al. (U.S. 4,665,411), and either JP 03231975 or JP 09059552.

The rejection is adequately set forth in paragraph 11 of the office action mailed 6/12/02, Paper No.4, and is incorporated here by reference.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi et al. in view of Meyrick et al., Kiritani et al., and either JP 03231975 or JP 09059552 as applied to claims 1, 4-11, 13-14, and 17-18 above, and further in view of Idei et al. (U.S. 5,302,437).

The rejection is adequately set forth in paragraph 12 of the office action mailed 6/12/02, Paper No.4, and is incorporated here by reference.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi et al. (U.S. 6,031,019) in view of Meyrick et al. (U.S. 6,344,497), Kiritani et al. (U.S. 4,665,411), and Suzuki et al. (U.S. 5,508,421).

Tsutsumi et al. disclose a water-based ink jet ink wherein the ink comprises polymer particles colored with oil-soluble dye wherein the polymer includes vinyl polymer comprising ionic groups (col.1, lines 14-24, col.3, line 65-col.4, line 17, col.4, lines 21 and 49-51, col.6, lines 54-56, col.8, lines 11-12, col.11, lines 38-44 and 56-60, col.12, lines 61-67, and col.14, lines 41-43).

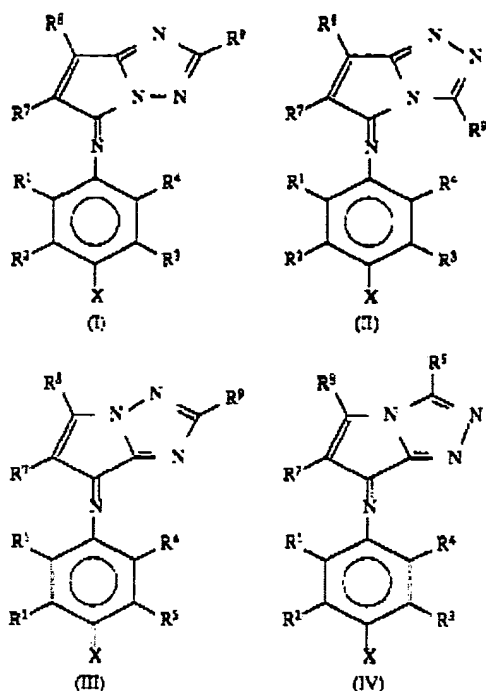
The difference between Tsutsumi et al. and the present claimed invention is the requirement in the claims of (a) high-boiling solvent and (b) specific type of oil-soluble dye.

With respect to difference (a), it is noted that Tsutsumi et al. disclose that the polymer and dye are added to water-insoluble solvent to form a solution or dispersion to which water is added, and then the mixture is emulsified. However, there is no explicit disclosure that the solvent is a high boiling point solvent as presently claimed.

Meyrick et al., which is drawn to ink jet inks, disclose the use of water-insoluble solvent such as dibutyl phthalate. Meyrick et al. also disclose the equivalence and interchangeability of toluene, as disclosed by Tsutsumi et al., with dibutyl phthalate (col.8, lines 13 and 20). Although there is no explicit disclosure of the dielectric constant of the solvent, it is well known as evidenced in Kiritani et al. (col.3, line 41) that dibutyl phthalate has dielectric constant of 6.4.

The motivation for using such solvent is to produce ink with improved optical density and chroma (Table 2).

With respect to difference (b), Suzuki et al. disclose the use of oil-soluble dyes of the formula:



which are identical to the dyes presently claimed and wherein X is OH or NR⁵R⁶, R¹-R⁴ and R⁹ are hydrogen, alkyl, halogen, etc., R⁷, which corresponds to presently claimed R²⁰¹, is cyano, COR, etc., and R⁸, which corresponds to presently claimed R²⁰², is hydrogen, heterocyclic group, alkyl, aryl, cyano, etc.. It is also disclosed that the dyes are suitable for use in inks (col.3, lines 38-67, col.4, lines 12-29, col.6, line 42-col.7, line 57, col.9, lines 12-52, col.10, lines 14-30, and col.13, lines 3-5 and 21-23). The motivation for using such dyes is that they possess high absorption and high fastness to light and heat (col.2, lines 7-10 and col.3, lines 14-21).

In light of the motivation for using specific type of solvent disclosed by Meyrick et al. as described above and for using specific type of oil-soluble dye disclosed by Suzuki et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such solvent and dye in the ink jet ink of Tsutsumi et al. in order to produce an ink with

improved optical density and chroma and which possess high absorption and high fastness to light and heat, and thereby arrive at the claimed invention.

Response to Arguments

8. Applicants' arguments regarding Helling et al. (U.S. 6,313,196) have been considered but they are moot in view of the discontinuation of this reference against the present claims.

9. Applicants arguments filed 12/12/02 have been fully considered but, with the exception of arguments relating to Helling et al., they are not persuasive.

Specifically, applicants argue that:

(a) there is no disclosure in Tsutsumi et al. of hydrophobic high-boiling point organic solvent and oil-soluble dye as presently claimed.

(b) There is no disclosure in Tsutsumi et al. of what constitution the ink should have in order to realize improved permeability with respect to photo quality paper and reduction in printing blemishes.

(c) There is no disclosure in Meyrick et al. or Kiritani et al. of combination of ionic group containing vinyl polymer and oil-soluble dye as presently claimed.

(d) There is no motivation to combine Tsutsumi et al. with Meyrick et al. or Kiritani et al. since the inks of Meyrick et al. and Kiritani et al. are so vastly different than that of Tsutsumi et al.

(e) There is no motivation to combine Tsutsumi et al. with JP 03231975 or JP 09059522.

With respect to argument (a), it is agreed that there is no disclosure in Tsutsumi et al. of high-boiling point organic solvent and oil-soluble dye as presently claimed which is why Tsutsumi et al. is used in combination with Meyrick et al. which teaches the use of presently claimed high-boiling point organic solvent in ink jet inks and in combination with either JP 03231975 or JP 09059522 which each teach the use of presently claimed oil-soluble dye in ink jet inks.

With respect to argument (b), although there is no disclosure that Tsutsumi et al. of what constitution the ink should have in order to realize improved permeability with respect to photo paper quality and reduction in printing blemishes, it is noted that there is no requirement in the present claims regarding permeability or printing blemishes. Further, even if such limitations were present, given that Tsutsumi et al. in view of Meyrick et al. and either JP 03231975 or JP 09059522 disclose ink identical to that presently claimed, it is clear that such ink would intrinsically possess improved permeability and reduction in printing blemishes.

With respect to argument (c), it is agreed that there is no disclosure in Meyrick et al. or Kiritani et al. of combination of ionic group containing vinyl polymer and oil-soluble dye as presently claimed. With respect to Kiritani et al., it is noted that this reference is only used to teach the dielectric constant of solvent, i.e. dibutyl phthalate, disclosed by Meyrick et al.

With respect to Meyrick et al., note that while Meyrick et al. do not disclose all the features of the present claimed invention, Meyrick et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the

presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, the use of high-boiling point organic solvent in ink jet ink, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

With respect to argument (d), it is agreed that Kiritani et al. do not disclose ink as presently claimed, however, Kiritani et al. is not used for its teaching of ink. Kiritani et al. is only used to teach the dielectric constant of a solvent disclosed by Meyrick et al.

With respect to Meyrick et al., it is the examiner's position that there is proper motivation to combine Tsutsumi et al. with Meyrick et al. for the following reasons.

Tsutsumi et al. disclose ink jet ink comprising polymer particles colored with oil-soluble dye and further discloses the use of water-insoluble solvent, however, there is no disclosure in Tsutsumi et al. of high-boiling point organic solvent as presently claimed.

Meyrick et al., which is also drawn to ink jet ink, disclose the use of high-boiling point organic solvent as presently claimed and further, Meyrick et al. disclose the equivalence and interchangeability of high-boiling point organic solvent such as dibutyl phthalate with toluene, the solvent utilized in Tsutsumi et al. Additionally, Meyrick et al. disclose that the motivation for using such solvent is to produce ink with improved optical density and chroma.

Thus, given that Meyrick et al. is drawn to same field of endeavor as Tsutsumi et al., that Meyrick et al. disclose the equivalence and interchangeability of high-boiling point organic

solvent as presently claimed with solvent disclosed by Tsutsumi et al., and further given that Meyrick et al. disclose motivation for using such solvent, it is the examiner's position that there is motivation to combine Tsutsumi et al. with Meyrick et al.

With respect to argument (e), it is noted that Tsutsumi et al. disclose ink jet ink comprising oil-soluble dye, however, there is no disclosure of specific oil-soluble dye as presently claimed.

JP 03231975 and JP 09059522 are each drawn to ink jet ink and each reference discloses dye identical to that presently claimed. Further, JP 03231975 discloses that the motivation for using such dye is to produce printed image with good hue, while JP 09059522 discloses that the motivation for using such dye is to produce printed image that has excellent color tone, reproducibility, and resistance to light.

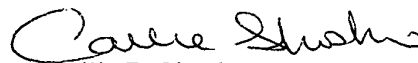
Thus, given that either JP 03231975 or JP 09059522 is drawn to the same field of endeavor as Tsutsumi et al., given that Tsutsumi et al. disclose ink jet ink with oil-soluble dye, and given that JP 03231975 or JP 09059522 each disclose dye identical to that presently claimed as well as motivation for using such dye, it is the examiner's position that there is proper motivation to combine Tsutsumi et al. with either JP 03231975 and JP 09059522.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho
Examiner
Art Unit 1714

CS
March 7, 2003